

LISTING OF THE CLAIMS

1. (Previously Presented) A process for depositing a film onto a bare or unplated zinc or zinc alloy substrate, the process comprising:
directly depositing a film onto a portion of the substrate by physical vapor deposition, the film being a metal film, a ceramic film or a combination thereof,
wherein the metal film includes chromium, nickel, titanium, zirconium or a combination thereof, and wherein the ceramic film includes a nitride, a carbide, an oxide or a nitroxide of chromium, nickel, titanium, zirconium, or a combination thereof.
2. (Previously Presented) The process of Claim 1 wherein the film is a metal film and the metal film includes chromium, nickel or a combination thereof.
3. (Previously Presented) The process of Claim 2 wherein the metal film is deposited at a maximum internal reactor pressure of about 5×10^{-2} torr using a DC voltage ranging from about 25 Volts to about 600 Volts and at deposition rates of about 200 Angstroms to more than 1,000 Angstroms per minute to obtain film thicknesses ranging from about 1,000 Angstroms to about 20,000 Angstroms.
4. (Previously Presented) The process of Claim 2, wherein the metal film is deposited at a maximum internal reactor pressure of about 5×10^{-2} Torr using a DC voltage ranging from about 40 Volts to about 200 Volts at deposition rates of about 400 Angstroms to more than 500 Angstroms per minute to obtain film thicknesses ranging from about 2,500 Angstroms to about 9,000 Angstroms
5. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film and the ceramic film includes a nitride, a carbide, an oxide or a nitroxide of titanium or zirconium.
6. (Previously Presented) The process of Claim 5 wherein the ceramic film is deposited at a maximum internal reactor pressure of about 5×10^{-2} torr using a DC voltage ranging from about 25 Volts to about 600 Volts and at deposition rates of about 200 Angstroms to more than 1,000

Angstroms per minute to obtain film thicknesses ranging from about 100 Angstroms to about 20,000 Angstroms.

7. (Previously Presented) The process of Claim 5, wherein the ceramic film is deposited at a maximum internal reactor pressure of about 5×10^{-2} Torr using a DC voltage ranging from about 40 Volts to about 200 Volts at deposition rates of about 400 Angstroms to more than 500 Angstroms per minute to obtain film thicknesses ranging from about 2,500 Angstroms to about 9,000 Angstroms.

8. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a nitride, a carbide, and oxide or a nitroxide of titanium.

9. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a nitride, a carbide, an oxide or a nitroxide of zirconium.

10. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a nitride, a carbide, an oxide or a nitroxide of both titanium and zirconium.

11. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a nitride of chromium, nickel, titanium or zirconium.

12. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a carbide of chromium, nickel, titanium or zirconium.

13. (Previously Presented) The process of Claim 1 wherein the film is a ceramic film including a nitroxide of chromium, nickel, titanium or zirconium.

14. (Previously Presented) The process of Claim 1 wherein the film is a metal film including chromium.

15. (Previously Presented) The process of Claim 1 wherein the film is a metal film including nickel.

16. (Previously Presented) The process of Claim 1 wherein the ceramic film has a thickness of from about 1,500 Angstroms to about 20, 000 Angstroms.